

Notice of Allowability

Application No.

09/810,741

Examiner

Eduardo Garcia-Otero

Applicant(s)

WILLIAMS, ROBERT ARTHUR

Art Unit

2123

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment and IDS received 12/10/04.
2. ☒ The allowed claim(s) is/are 35-66.
3. ☒ The drawings filed on 16 March 2001 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

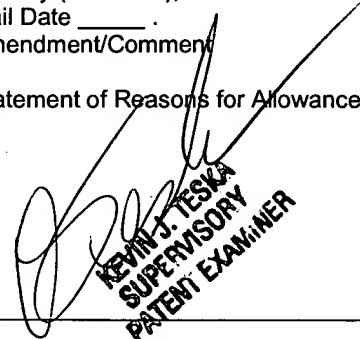
* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 12/10/04
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


KEVIN J. TESKA
SUPERVISORY
PATENT EXAMINER

EXAMINER'S AMENDMENT and REASONS FOR ALLOWANCE

Introduction

1. Title is: METHOD OF PILOT TRAINING USING SIMULATED ENGINE FAILURE.
2. First named inventor is: WILLIAMS.
3. Claims 35-66 have been submitted, examined, and allowed.
4. US application was filed 3/16/2001, and no earlier priority is claimed.
5. Applicant's Amendment was received 12/10/04, including an Information Disclosure Statement.
6. Applicant's email of 2/23/2005 is attached as an Examiner's Amendment.

Index of Important Prior Art

7. Evans refers to US patent 5,873,546.
8. Lea refers to US Patent 4,831,567.
9. Schmidt refers to US Patent 4,673,356

Information Disclosure Statement (IDS)

10. Applicant has submitted Sikorski 76 Flight Manual, pages 1-8E, and 5-44 through 5-47. This publication was listed on a previous IDS, but was not present in the file and was not considered by the Examiner. The Examiner has now considered this publication, and signed the IDS to certify that the reference has been considered. The signed IDS accompanies this office action.

Definitions

11. "OEI" is defined as "one engine inoperative" condition at Evans column 1 line 23.

Examiner's Amendment

12. On 2/23/05, the Examiner spoke with John Darling, Registration Number 44,482 at 703-905-2045. The Examiner stated that the Application was near condition for allowance, except for some 35 USC 101 issues regarding the limitation "software component" in claims 22 and 32, and some informalities regarding claim numbering (for example, claim 8 improperly depending from claim 9, which is a higher numbered claim). The Examiner requested amendments to the claims to overcome these issues and informalities.

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13. The Applicant amended the claims as requested, and submitted clean claims via email. The Examiner hereby amends the claims according to said email, which is attached with a clean copy of the amended claims, per MPEP 1302.04.
14. Said email cancels all prior claims, and adds new claims 35-66. The new claims were requested by the Examiner, and overcome all prior rejections and objections. Thus, the new claims are marked "requested" as discussed in MPEP 1302.04:

As an alternative, the examiner's amendment utilizing paragraph/claim replacement can be created by the examiner with authorization from the applicant. The examiner's amendment can also be created from a facsimile transmission or e-mailed amendment received by the examiner and referenced in the examiner's amendment and attached thereto. Any subject matter, in clean version form (containing no brackets or underlining), to be added to the specification/claims should be set forth separately by applicant in the e-mail or facsimile submission apart from the remainder of the submission. A clean version of a paragraph/claim, or portion of a paragraph/claim, submitted by applicant in a fax or e-mail, should be printed and attached to the examiner's amendment and may be relied on as part of the examiner's amendment. The examiner should mark "requested" on the entire attachment to indicate that the fax or e-mail was requested by the examiner, so as to not lead to a reduction in patent term adjustment (37 CFR 1.704(c)(8)). As the attachment is made part of the examiner's amendment, it does not get a separate PALM code and will not trigger any reduction in patent term adjustment. A paper copy of the entire e-mail or facsimile submission should be entered in the application file. Examiners are not required to electronically save any e-mails once any e-mails or attachments thereto are printed and become part of an application file record. The e-mail practice that is an exception for examiner's amendments is restricted to e-mails to the examiner from the applicant and should not be generated by the examiner to the applicant unless such e-mails are in compliance with all of the requirements set out in MPEP § 502.03.

Reasons for Allowance

15. Independent claim 35 is a "method" claim with three limitations:
- "reducing the power output of a first engine to simulate the engine failure;"
 - "increasing the power output of at least a second engine to compensate for the reduction of the power output of the first engine; and"
 - "displaying fictional engine condition data simultaneously with accurate engine condition data".
16. Claim 35 is not anticipated and not obvious in view of the prior art. Although it is well known in the art to simulate an OEI failure (one engine inoperative failure) as part of certification training, the present claim 35 goes beyond the prior art by "displaying fictional engine condition data simultaneously with accurate engine condition data". Thus, for example, the pilot being trained may see fictional data showing that one engine is totally inoperative (0% power), whereas said one engine

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may really be operating at 20% power and the instructor would see the accurate engine data stating 20% power.

17. See specification page 5 paragraph 0012 for additional discussion.
18. Note that the Sikorsky Flight Manual discusses engine failure training mode at page 1-8E, but does not disclose the above claim 35.
19. All other claims either contain these three limitations, or else depend from a claim that contains these three limitations.
20. Thus, all pending claims are allowed.

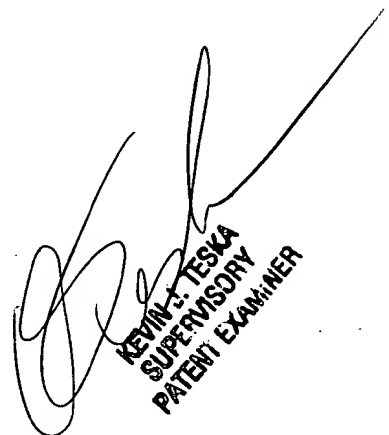
Conclusion

21. All pending claims are allowed. All prior objections and rejections are withdrawn. The Sikorsky publication has been considered.

Communication

22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eduardo Garcia-Otero whose telephone number is 571-272-3711. The examiner can normally be reached on Monday through Thursday from 9:00 AM to 8:00 PM. If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Kevin Teska, can be reached at 571-272-3761. The fax phone number for this group is 703-872-9306.

* * * *



KEVIN J. TESKA
SUPERVISORY
PATENT EXAMINER

Garcia-Otero, Eduardo

REQUESTED

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From: Darling, John P. [jdarling@pillsburywinthrop.com]
Sent: Wednesday, February 23, 2005 5:44 PM
To: Garcia-Otero, Eduardo
Subject: U.S. Application 09/810,741

<<N_VIRGINIA_30513144_1.DOC>>

Dear Examiner Garcia-Otero,

Enclosed are new claims 35-66 for U.S. Application 09/810,741. If you have any questions or comments, or if there is anything else you need, please contact me.

Sincerely,

John P. Darling
Pillsbury Winthrop LLP
1600 Tysons Boulevard
McLean, VA 22102
(T) (703) 905-2045
(F) (703) 905-2500
jdarling@pillsburywinthrop.com

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Amendments to the Claims**Listing of Claims:**REQUESTED
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1.-34. (Canceled)

35. (New) A method for simulating an engine failure in a multiple-engine aircraft, the method comprising:

- reducing the power output of a first engine to simulate the engine failure;
- increasing the power output of at least a second engine to compensate for the reduction of the power output of the first engine; and
- displaying fictional engine condition data simultaneously with accurate engine condition data.

36. (New) The method of claim 35, wherein the aircraft has more than two engines.

37. (New) The method of claim 35, wherein the aircraft is a helicopter.

38. (New) The method of claim 35, further comprising :
checking one or more aircraft safety systems before starting the simulation.

39. (New) The method of claim 35, further comprising:
limiting the total power output of the aircraft to the maximum power output of the engines which are not simulating the engine failure;

limiting the power output level of each engine which is not simulating the engine failure to a level at or below the level at which engine damage will occur; and

limiting the total power output of the engines which are simulating the engine failure to a level at or below the total power output of the aircraft minus the total power output of the engines which are not simulating the engine failure.

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40. (New) The method of claim 35, further comprising:
monitoring one or more aircraft systems and returning the aircraft to normal operation whenever a fault is detected in any monitored system.
41. (New) The method of claim 35, wherein
the displaying fictional engine condition data simultaneously with accurate engine condition data includes displaying fictional engine condition data for each of the first and second engines simultaneously with accurate engine condition data for each of the first and second engines.
42. (New) The method of claim 35, wherein
the displaying of fictional engine condition data simultaneously with accurate engine condition data includes displaying the fictional engine condition data on a first display device and displaying the current, accurate engine condition data on a second display device, which is separate from the first display device.
43. (New) A method for simulating an engine failure in a multiple-engine aircraft, the method comprising:
reducing the power output of a first engine to simulate the engine failure;
increasing the power output of at least a second engine to a power level sufficient to permit aircraft flight without significant damage to any engine; and
displaying fictional engine condition data indicating that the power output of the first engine is substantially zero and that the power output of the second engine is higher than the true power output,
wherein accurate engine condition data is provided in combination with the fictional engine condition data.
44. (New) The method of claim 43, wherein
the fictional engine condition data is displayed on a flat panel display.

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45. (New) The method of claim 43, further comprising:
providing an alert any time the fictional power output of any engine exceeds the maximum power output attainable without engine damage.
46. (New) The method of claim 43, wherein
the fictional engine condition data is provided in the form of needle type gauges in combination with digital readouts.
47. (New) The method of claim 43, wherein
the displaying fictional engine condition data and providing accurate engine condition data includes displaying fictional engine condition data for each of the first and second engines simultaneously with accurate engine condition data for each of the first and second engines.
48. (New) The method of claim 43, wherein
the displaying of fictional engine condition data and the providing of accurate engine condition data includes displaying the fictional engine condition data on a first display device and displaying the current, accurate engine condition data on a second display device, which is separate from the first display device.
49. (New) A computer-readable media encoded with a computer program for simulating an engine failure in a multiple-engine aircraft, the program comprising a method of:
reducing the power output of at least one engine to simulate the engine failure;
increasing the power output of at least a second engine to a power level sufficient to permit aircraft flight without significant damage to any engine; and
displaying fictional engine condition data simultaneously with accurate engine condition data.
50. (New) The computer-readable media of claim 49, wherein

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the aircraft has more than two engines.

51. (New) The computer-readable media of claim 49, wherein the aircraft is a helicopter.

52. (New) The computer-readable media of claim 49, wherein the method further comprises:

limiting the total power output of the aircraft to the maximum power output of the engines which are not simulating the engine failure;

limiting the power output level of each engine which does not have a simulated engine failure to a level at or below the level at which engine damage will occur; and

limiting the total power output of the engines which do have a simulated engine failure to a level at or below the total power output of the aircraft minus the total power output of the engines which are not simulating the engine failure.

53. (New) The computer-readable media of claim 49, wherein the method further comprises:

monitoring one or more aircraft systems and returning the aircraft to normal operation whenever a fault is detected in any monitored system.

54. (New) The computer-readable media of claim 49, wherein

the displaying fictional engine condition data simultaneously with accurate engine condition data includes displaying fictional engine condition data for each of the first and second engines simultaneously with accurate engine condition data for each of the first and second engines.

55. (New) A computer-readable media encoded with a computer program for simulating engine failure in a multiple-engine aircraft, the program comprising a method of:

reducing the power output of an engine having a simulated engine failure;

increasing the power output of a second engine to a power level sufficient to permit aircraft flight without significant damage to any engine; and

displaying fictional engine condition data indicating that the power output of the simulated failed engine is zero and that the power output of at least one of the remaining engines is higher than the true value,

wherein accurate engine condition data is provided in combination with the fictional engine condition data.

56. (New) The computer-readable media of claim 55, wherein the fictional engine condition data is displayed on a flat panel display.

57. (New) The computer-readable media of claim 55, wherein the method further comprises:

providing an alert any time the fictional power output of any engine exceeds the maximum power output attainable without engine damage.

58. (New) The computer-readable media of claim 55, wherein the aircraft system condition data is provided in the form of needle type gauges in combination with digital readouts.

59. (New) The computer-readable media of claim 55, wherein the displaying fictional engine condition data and providing accurate engine condition data includes displaying fictional engine condition data for each of the first and second engines simultaneously with accurate engine condition data for each of the first and second engines.

60. (New) A multiple-engine aircraft comprising:
a first engine;
a second engine;
a computer-readable media encoded with a computer program, the program comprising a method of;

reducing the power output of the first engine to simulate engine failure;
increasing the power output of the second engine to compensate for the reduction of the power output of the first engine; and
displaying fictional engine condition data simultaneously with accurate engine condition data.

61. (New) The aircraft of claim 60, further comprising:
a third engine.
62. (New) The aircraft of claim 60, wherein
the aircraft is a helicopter.
63. (New) The aircraft of claim 60, wherein the method further comprises:
checking one or more aircraft safety systems before reducing the power to any engine.
64. (New) The aircraft of claim 60, wherein the method further comprises:
limiting the total power output of the aircraft to the maximum power output of the engines which are not simulating the engine failure;
limiting the power output level of each engine which is not simulating the engine failure to a level at or below the level at which engine damage will occur; and
limiting the total power output of the engines which are simulating the engine failure to a level at or below the total power output of the aircraft minus the total power output of the engines which are not simulating the engine failure.
65. (New) The aircraft of claim 60, wherein the method further comprises:
monitoring one or more aircraft systems and returning the aircraft to normal operation whenever a fault is detected in any monitored system.
66. (New) The aircraft of claim 60, wherein

the displaying fictional engine condition data simultaneously with accurate engine condition data includes displaying fictional engine condition data for each of the first and second engines simultaneously with accurate engine condition data for each of the first and second engines.